Claims

1.   A method for obtaining information about a transmission capability of
a transmission link (TL), wherein a sending entity (SE) sends data
packets at a sending rate to the transmission link (TL) which transmits
the data packets according to its transmission capability to a receiving
entity (RE) receiving the data packets at a receiving rate,
characterized in that the sending rate is modulated with a rate
modulation and the following steps are executed by an analysis entity
(AE)
- obtaining the sending rate,
- obtaining the receiving rate,
- comparing the obtained sending rate and the obtained
receiving rate to determine a relation of the obtained sending
rate and the obtained receiving rate and to determine an
appearance of the rate modulation of the sending rate in the
obtained receiving rate, and
- obtaining the information about the transmission capability
based on the determined relation and the determined
appearance of the rate modulation.

2.   The method according to claim 1, wherein the obtained information
about the transmission capability is at least one of information about a
transmission rate of the transmission link, information about a
relationship of the transmission rate versus the sending rate, and
information about a status of a buffer of the transmission link.

3.   The method according to claim 1 or 2, wherein the obtained receiving
rate is separated into a fraction having the rate modulation and a
fraction having not the rate modulation and the obtained receiving
rate is separated into a fraction having the rate modulation and a

fraction having not the rate modulation and the fraction of the sending rate having not the rate modulation is compared to the fraction of the receiving rate having not the rate modulation to determine the relation and the fraction of the receiving rate having the rate modulation is analyzed for the determining of the appearance of the rate modulation.

4.   The method according to claim 1-3, wherein the obtained sending rate and the obtained receiving rate are subtracted and the subtracted signal is analyzed to determine the relation and the appearance of the rate modulation.

5.   The method according to any of the preceding claims, wherein the data packets are sent from the sending entity to the receiving entity end-to-end on a first layer and the transmission capability of the transmission link is defined by a second layer being a non end-to-end layer below the first layer and at least one of the sending rate and the receiving rate are obtained based on information from the first layer or one or more end-to-end layers above the first layer.

6.   The method according to any of the preceding claims, wherein the sending rate and the receiving rate are obtained and compared on the base of sequence numbers associated to the data packets and/or over time.

7.   The method according to any of the preceding claims, wherein at least one of the sending rate and the receiving rate are communicated to the analysis entity.

8.   The method according to claim 7, wherein the analysis entity obtains receiving rate related information on the base of sequence numbers

by receiving receiver reports from the receiving entity, each receiver
report being received at a receiving time at the analysis entity which
determines for each receiver report the respective receiving time and
a respective included sequence number, each included sequence
number indicating the most progressed of the sequence numbers
available at the time of the generation of the respective receiver
report at receiving entity, and the analysis entity calculates the
obtained receiving rate on the base of the receiving rate related
information.

9. The method according to claim 10, wherein the receiver reports are
generated and sent from the receiving entity according to a rule and
the rate modulation of the sending rate is adjusted to the rule.

10. The method according to claim 9 or 11, wherein the receiver reports
comply with the Real-Time protocol Control part Protocol _(RTCP)_.

11. The method according to any of the preceding claims, wherein the
data packets comply with the Real-Time Protocol _(RTP)_.

12. The method according to any of the preceding claims, wherein the
sending rate is adjusted to at least one of pre-known information
about one or more possible transmission capabilities of the
transmission link and the obtained information about the transmission
capability.

13. The method according to any of the preceding claims, wherein the
transmission capability is adjusted based on the obtained information
about the transmission capability.

14.   The method according to any of the preceding claims, wherein the sending entity receives the data packets at one or more further sending rates from a further sending entity and, based on the obtained information about the transmission capability, the sending entity is instructed to send the data packets to the transmission link at a new sending frequency according to one of the one or more further sending rates.

15.   The method according to claim 14, wherein the one or more further sending rates are not modulated with the rate modulation and the sending entity effects the rate modulation of the new sending rate.

16.   The method according to any of the preceding claims, wherein the analysis entity and the sending entity are located on a streaming server.

17.   The method according to claim 14 or 15, wherein the analysis entity and the sending entity are located on a proxy server and the further sending entity is located on a streaming server.

18.   The method according to any of the claims 1 to 15, wherein the analysis entity is located at the receiving entity.

19.   The method according to any of the preceding claims, wherein the transmission link is or comprises a wireless link of a mobile communication network.

20.   An analysis entity (AE) for obtaining a transmission capability of a transmission link (TL) in a communication system where in data packets are sent from a sending entity (SE) at a sending rate being modulated with a rate modulation to the transmission link (TL) which

transmits the data packets according to its transmission capability to a
receiving entity (RE) receiving the data packets at a receiving rate,
the analysis entity (AE) comprising a receiving unit for receiving
messages and information, a processing unit for processing
messages and information, and a transmission unit for sending
messages and information, wherein the receiving unit is adapted to
receive sending rate related information and to receive receiving rate
related information, the processing unit being adapted to obtain the
sending rate from the sending rate related information and to obtain
the receiving rate from the receiving rate related information, and to
compare the obtained sending rate and the obtained receiving rate to
determine a relation of the obtained sending rate and the obtained
receiving rate and to determine an appearance of the rate modulation
of the sending rate in the obtained receiving rate, and to obtain the
information about the transmission capability based on the relation
and the appearance of the rate modulation.

21.   The analysis entity (AE) according to claim 20, wherein the analysis
        entity (AE) is adapted to perform steps in a method according to any
        of the claims 1 to 19.

22.   A computer program loadable into a processing unit of an analysis
        entity (AE) for obtaining a transmission capability of a transmission
        link (TL) in a communication system where in data packets are sent
        from a sending entity (SE) at a sending rate being modulated with a
        rate modulation to the transmission link (TL) which transmits the data
        packets according to its transmission capability to a receiving entity
        (RE) receiving the data packets at a receiving rate, the computer
        program comprising code to obtain the sending rate and the sending
        rate, to compare the obtained sending rate and the obtained receiving
        rate to determine a relation of the obtained sending rate and the

obtained receiving rate and to determine an appearance of the rate modulation of the sending rate in the obtained receiving rate, and to obtain the information about the transmission capability based on the relation and the appearance of the rate modulation.

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23. The computer program according to claim 22 adapted to perform steps of a method according to any of the claims 1 to 19.